

SEQUENCE LISTING

#8
RECEIVED
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TECH CENTER 1600/2900

<110> Cruz, Tony
Pastrak, Aleksandra
Turley, Eva A.

<120> Compositions and Methods for Treating Cellular Response to
Injury and Other Proliferating Cell Disorders Regulated by
Hyaladherin and Hyaluronans

<130> 033352-010

<140> US 09/978,309

<141> 2001-10-15

<150> US 09/685,010

<151> 2000-10-05

<150> US 09/541,522

<151> 2000-04-03

<150> US 60/127,457

<151> 1999-04-01

<160> 84

<170> FastSEQ for Windows Version 4.0

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<223> Peptide that binds a hyalauronan

<221> VARIANT

<222> (1)...(5)

<223> Xaa = any amino acid

<221> HELIX

<222> (1)...(5)

<223> Alpha-helix

<221> VARIANT

<222> (6)...(8)

<223> Xaa = Lysine or Arginine

<400> 1

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<223> Xaa = any amino acid

<221> HELIX

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<223> Alpha-helix

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<223> Xaa = Lysine or Arginine

<221> VARIANT

<222> 7

<223> Xaa = Hydrophobic or neutral amino acid consisting of I, L, V, Q, S

<221> VARIANT

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<223> Xaa = Lysine or Arginine

<221> VARIANT

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<223> Xaa = Hydrophobic or neutral amino acid consisting of I, L, V, Q, S

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<223> Xaa = Lysine or Arginine

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<221> VARIANT
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 of I, L, V, Q, S

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 of I, L, V, Q, S

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<221> VARIANT
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<223> Xaa = Hydrophobic or neutral amino acid consisting
of I, L, V, Q, S

<221> VARIANT

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<223> Xaa = Lysine or Arginine

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Met Met Thr Val Leu Lys Arg

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Met Met Thr Val Leu Lys Val Lys Arg Leu Arg

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<223> Alpha-helix

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Met Met Thr Val Leu Lys Val Lys Val Lys Arg Lys

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Met Met Thr Val Leu Lys Val Arg Lys Arg

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<221> HELIX

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Met Met Thr Val Leu Lys Val Arg Lys

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<212> PRT

<213> Homo sapien

<400> 11

Lys Leu Gln Ala Thr Gln Lys Pro Leu Thr Glu Ser Lys

1

5

10

<210> 12

<211> 12

<212> PRT

<213> Homo sapien

<400> 12

Val Ser Ile Glu Lys Glu Lys Ile Asp Glu Lys Ser

1

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<223> Peptide developed based upon the TAM domain
(Transient Activator of MAP kinases)

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<400> 13

Val Ser Xaa Glu Lys Glu

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<213> Mus musculus

<400> 14

Lys Leu Gln Ala Thr Gln Lys Asp Leu Thr Glu Ser Lys Gly Lys Ile

1

5

10

15

Val Gln Leu Glu Gly Lys Leu

20

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<211> 14
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 <213> Mus musculus

<400> 15
 Lys Leu Gln Ala Thr Gln Lys Asp Leu Thr Glu Ser Lys Gly
 1 5 10

<210> 16
 <211> 25
 <212> PRT
 <213> Mus musculus

<400> 16
 Val Ser Ile Glu Lys Glu Lys Ile Asp Glu Lys Cys Glu Thr Glu Lys
 1 5 10 15
 Leu Leu Glu Tyr Ile Gln Glu Ile Ser
 20 25

<210> 17
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 <212> PRT
 <213> Mus musculus

<220>
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<400> 17
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 1 5 10

<210> 18
 <211> 14
 <212> PRT
 <213> Homo sapien

<400> 18
 Leu Lys Ser Lys Phe Ser Glu Asn Gly Asn Gln Lys Asn Leu
 1 5 10

<210> 19
 <211> 14
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<213> Homo sapien

<400> 19

Lys Leu Gln Val Thr Gln Arg Ser Leu Glu Glu Gln Lys Gly
1 5 10

<210> 20

<211> 14

<212> PRT

<213> Mus musculus

<400> 20

Leu Lys Ala Lys Phe Ser Glu Asp Gly His Gln Lys Asn Met
1 5 10

<210> 21

<211> 14

<212> PRT

<213> Mus musculus

<400> 21

Gln Glu Arg Gly Thr Gln Asp Lys Arg Ile Gln Asp Met Glu
1 5 10

<210> 22

<211> 21

<212> PRT

<213> Homo sapien

<400> 22

Gly Thr Leu Lys Leu Asp Lys Leu Gly Ser Gln Ala Asp Thr Gly Gln
1 5 10 15
Lys Glu Leu Lys Gln
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<210> 23

<211> 20

<212> PRT

<213> Homo sapien

<400> 23

Glu Ser Thr Asn Gln Glu Tyr Ala Arg Met Val Gln Asp Leu Gln Asn
1 5 10 15
Arg Ser Thr Leu
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<210> 24
 <211> 11
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 <213> Homo sapien

<400> 24
 Lys Leu Arg Ser Gln Leu Val Lys Arg Lys Gln
 1 5 10

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<400> 25
 Arg Gln Lys Val Leu Lys Arg Gln Leu Lys Ser
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<210> 26
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<400> 26
 Cys Ser Thr Met Met Ser Arg Ser His Lys Thr Arg Ser His His Val
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<210> 27
 <211> 9
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<400> 27
 Arg Gly Gly Gly Arg Gly Arg Arg Arg
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<210> 28
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 <223> Xaa = Any amino acid other than an acidic amino acid

<221> HELIX
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 <223> Alpha-helix

<221> VARIANT
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<400> 28
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<210> 29
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 <223> Xaa = any amino acid other than an acidic amino acid

<221> VARIANT
 <222> (5)...(7)
 <223> Xaa = any basic amino acid

<221> VARIANT
 <222> (8)...(9)
 <223> Xaa = any amino acid other than an acidic amino acid

<221> VARIANT
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 <223> Xaa = any basic amino acid

<400> 29
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 1 5 10

<210> 30
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<220>
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<400> 30
 Lys Gln Lys Ile Lys His Val Val Lys Leu Lys
 1 5 10

<210> 31
 <211> 10
 <212> PRT
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<220>
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<400> 31
 Lys Leu Lys Ser Gln Leu Val Lys Arg Lys
 1 5 10

<210> 32
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<220>

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<400> 32

Arg Tyr Pro Ile Ser Arg Pro Arg Lys Arg
1 5 10

<210> 33

<211> 9

<212> PRT

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<400> 33

Lys Asn Gly Arg Tyr Ser Ile Ser Arg
1 5

<210> 34

<211> 13

<212> PRT

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<223> Peptide composition that binds a hyalauronan

<400> 34

Arg Asp Gly Thr Arg Tyr Val Gln Lys Gly Glu Tyr Arg
1 5 10

<210> 35

<211> 9

<212> PRT

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<220>

<223> Peptide composition that binds a hyalauronan

<400> 35

Arg Arg Arg Cys Gly Gln Lys Lys Lys
1 5

<210> 36

<211> 9

<212> PRT
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<400> 36
 Arg Gly Thr Arg Ser Gly Ser Thr Arg
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<210> 37
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 <212> PRT
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<220>
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<400> 37
 Arg Arg Arg Lys Lys Ile Gln Gly Arg Ser Lys Arg
 1 5 10

<210> 38
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<220>
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<400> 38
 Arg Lys Ser Tyr Gly Lys Tyr Gln Gly Arg
 1 5 10

<210> 39
 <211> 9
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<400> 39
 Lys Val Gly Lys Ser Pro Pro Val Arg
 1 5

<210> 40
<211> 9
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<400> 40
Lys Thr Phe Gly Lys Met Lys Pro Arg
1 5

<210> 41
<211> 9
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<400> 41
Arg Ile Lys Trp Ser Arg Val Ser Lys
1 5

<210> 42
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Lys Arg Thr Met Arg Pro Thr Arg Arg
1 5

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Lys Val Gly Lys Ser Pro Pro Val Arg

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<210> 44

<211> 10

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His Arg Glu Ala Arg Ser Gly Lys Tyr Lys

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10

<210> 45

<211> 588

<212> DNA

<213> Homo sapien

<220>

<221> CDS

<222> (1)...(486)

<400> 45

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Glu Phe Ala Ala Ala Ser Thr Asn Lys Pro Pro Ala Val Ser Pro Gly

1

5

10

15

gtg gtc tcc cca acc ttt gaa ctt aca aat ctt cta aat cat cct gac 96

Val Val Ser Pro Thr Phe Glu Leu Thr Asn Leu Leu Asn His Pro Asp

20

25

30

cat tat gta gaa aca gag aac att cag cat ctc aca gac ccg gct cta 144

His Tyr Val Glu Thr Glu Asn Ile Gln His Leu Thr Asp Pro Ala Leu

35

40

45

gca cat gtg gat aga ata agc caa gcc cgg aaa ctg agt atg gga tct 192

Ala His Val Asp Arg Ile Ser Gln Ala Arg Lys Leu Ser Met Gly Ser

50

55

60

gat gat gct gcc tac aca caa gct ctg ctg gtg cac cag aag gcc aag 240

Asp Asp Ala Ala Tyr Thr Gln Ala Leu Leu Val His Gln Lys Ala Lys

65

70

75

80

atg gaa cgg ctt caa aga gag ctc gag atg caa aag aaa aag ctg gat 288

Met Glu Arg Leu Gln Arg Glu Leu Glu Met Gln Lys Lys Lys Leu Asp

85										90					95					
aaa	ctc	aaa	tct	gag	gtc	aat	gag	atg	gaa	aat	aat	cta	act	cga	agg	336				
Lys	Leu	Lys	Ser	Glu	Val	Asn	Glu	Met	Glu	Asn	Asn	Leu	Thr	Arg	Arg					
			100					105					110							
cgc	ctg	aag	aga	tca	aat	tcc	att	tcc	cag	ata	ccg	tca	ctc	gaa	gaa	384				
Arg	Leu	Lys	Arg	Ser	Asn	Ser	Ile	Ser	Gln	Ile	Pro	Ser	Leu	Glu	Glu					
		115					120					125								
atg	cag	cag	ttg	aga	agt	tgt	aat	aga	caa	ctc	cag	att	gac	att	gac	432				
Met	Gln	Gln	Leu	Arg	Ser	Cys	Asn	Arg	Gln	Leu	Gln	Ile	Asp	Ile	Asp					
	130					135					140									
ttt	gac	tgc	tta	acc	aaa	gaa	att	gca	tct	ttt	tca	agc	ccg	agg	acc	480				
Phe	Asp	Cys	Leu	Thr	Lys	Glu	Ile	Ala	Ser	Phe	Ser	Ser	Pro	Arg	Thr					
145					150				155					160						
aca	ttt	taaccccagc	gctattcata	acttttatga	caatattgga	tttgtaggcc	536													
Thr	Phe																			

ctgtgccacc aaaacccaaa gatcaaaggt ccaccatcaa aggtcgacgc gg 588

<210> 46

<211> 162

<212> PRT

<213> Homo sapien

<400> 46

Glu	Phe	Ala	Ala	Ala	Ser	Thr	Asn	Lys	Pro	Pro	Ala	Val	Ser	Pro	Gly	
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Val	Val	Ser	Pro	Thr	Phe	Glu	Leu	Thr	Asn	Leu	Leu	Asn	His	Pro	Asp	
			20					25					30			
His	Tyr	Val	Glu	Thr	Glu	Asn	Ile	Gln	His	Leu	Thr	Asp	Pro	Ala	Leu	
		35					40					45				
Ala	His	Val	Asp	Arg	Ile	Ser	Gln	Ala	Arg	Lys	Leu	Ser	Met	Gly	Ser	
	50					55					60					
Asp	Asp	Ala	Ala	Tyr	Thr	Gln	Ala	Leu	Leu	Val	His	Gln	Lys	Ala	Lys	
65				70					75						80	
Met	Glu	Arg	Leu	Gln	Arg	Glu	Leu	Glu	Met	Gln	Lys	Lys	Lys	Leu	Asp	
			85					90						95		
Lys	Leu	Lys	Ser	Glu	Val	Asn	Glu	Met	Glu	Asn	Asn	Leu	Thr	Arg	Arg	
			100				105						110			
Arg	Leu	Lys	Arg	Ser	Asn	Ser	Ile	Ser	Gln	Ile	Pro	Ser	Leu	Glu	Glu	
		115				120					125					
Met	Gln	Gln	Leu	Arg	Ser	Cys	Asn	Arg	Gln	Leu	Gln	Ile	Asp	Ile	Asp	
	130					135					140					
Phe	Asp	Cys	Leu	Thr	Lys	Glu	Ile	Ala	Ser	Phe	Ser	Ser	Pro	Arg	Thr	

145
Thr Phe

150

155

160

<210> 47
<211> 725
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<213> Homo sapien

<400> 47

Pro	Met	Ser	Phe	Pro	Lys	Ala	Pro	Leu	Lys	Arg	Phe	Asn	Asp	Pro	Ser	1	5	10	15
Gly	Cys	Ala	Pro	Ser	Pro	Gly	Ala	Asp	Val	Lys	Thr	Leu	Glu	Val	Leu	20	25	30	
Lys	Gly	Pro	Val	Ser	Phe	Gln	Lys	Ser	Gln	Arg	Phe	Lys	Gln	Gln	Lys	35	40	45	
Glu	Ser	Lys	Gln	Asn	Leu	Asn	Val	Asp	Lys	Asp	Thr	Thr	Leu	Pro	Ala	50	55	60	
Ser	Ala	Arg	Lys	Val	Lys	Ser	Ser	Glu	Ser	Lys	Lys	Glu	Ser	Gln	Lys	65	70	75	80
Asn	Asp	Lys	Asp	Leu	Lys	Ile	Leu	Glu	Lys	Glu	Ile	Arg	Val	Leu	Leu	85	90	95	
Gln	Glu	Arg	Gly	Ala	Gln	Asp	Arg	Arg	Ile	Gln	Asp	Leu	Glu	Thr	Glu	100	105	110	
Leu	Glu	Lys	Met	Glu	Ala	Arg	Leu	Asn	Ala	Ala	Leu	Arg	Glu	Lys	Thr	115	120	125	
Ser	Leu	Ser	Ala	Asn	Asn	Ala	Thr	Leu	Glu	Lys	Gln	Leu	Ile	Glu	Leu	130	135	140	
Thr	Arg	Thr	Asn	Glu	Leu	Leu	Lys	Ser	Lys	Phe	Ser	Glu	Asn	Gly	Asn	145	150	155	160
Gln	Lys	Asn	Leu	Arg	Ile	Leu	Ser	Leu	Glu	Leu	Met	Lys	Leu	Arg	Asn	165	170	175	
Lys	Arg	Glu	Thr	Lys	Met	Arg	Gly	Met	Met	Ala	Lys	Gln	Glu	Gly	Met	180	185	190	
Glu	Met	Lys	Leu	Gln	Val	Thr	Gln	Arg	Ser	Leu	Glu	Glu	Ser	Gln	Gly	195	200	205	
Lys	Ile	Ala	Gln	Leu	Glu	Gly	Lys	Leu	Val	Ser	Ile	Glu	Lys	Glu	Lys	210	215	220	
Ile	Asp	Glu	Lys	Ser	Glu	Thr	Glu	Lys	Leu	Leu	Glu	Tyr	Ile	Glu	Glu	225	230	235	240
Ile	Ser	Cys	Ala	Ser	Asp	Gln	Val	Glu	Lys	Tyr	Lys	Leu	Asp	Ile	Ala	245	250	255	
Gln	Leu	Glu	Glu	Asn	Leu	Lys	Glu	Lys	Asn	Asp	Glu	Ile	Leu	Ser	Leu	260	265	270	
Lys	Gln	Ser	Leu	Glu	Asp	Asn	Ile	Val	Ile	Leu	Ser	Lys	Gln	Val	Glu	275	280	285	
Asp	Leu	Asn	Val	Lys	Cys	Gln	Leu	Leu	Glu	Thr	Glu	Lys	Glu	Asp	His	290	295	300	

Val	Asn	Arg	Asn	Arg	Glu	His	Asn	Glu	Asn	Leu	Asn	Ala	Glu	Met	Gln	305	310	315	320
Asn	Leu	Glu	Gln	Lys	Phe	Ile	Leu	Glu	Gln	Arg	Glu	His	Glu	Lys	Leu	325	330	335	
Gln	Gln	Lys	Glu	Leu	Gln	Ile	Asp	Ser	Leu	Leu	Gln	Gln	Glu	Lys	Glu	340	345	350	
Leu	Ser	Ser	Ser	Leu	His	Gln	Lys	Leu	Cys	Ser	Phe	Gln	Glu	Glu	Met	355	360	365	
Val	Lys	Glu	Lys	Asn	Leu	Phe	Glu	Glu	Glu	Leu	Lys	Gln	Thr	Leu	Asp	370	375	380	
Glu	Leu	Asp	Lys	Leu	Gln	Gln	Lys	Glu	Glu	Gln	Ala	Glu	Arg	Leu	Val	385	390	395	400
Lys	Gln	Leu	Glu	Glu	Glu	Ala	Lys	Ser	Arg	Ala	Glu	Glu	Leu	Lys	Leu	405	410	415	
Leu	Glu	Glu	Lys	Leu	Lys	Gly	Lys	Glu	Ala	Glu	Leu	Glu	Lys	Ser	Ser	420	425	430	
Ala	Ala	His	Thr	Gln	Ala	Thr	Leu	Leu	Gln	Glu	Lys	Tyr	Asp	Ser		435	440	445	
Met	Val	Gln	Ser	Leu	Glu	Asp	Val	Thr	Ala	Gln	Phe	Glu	Ser	Tyr	Lys	450	455	460	
Ala	Leu	Thr	Ala	Ser	Glu	Ile	Glu	Asp	Leu	Lys	Leu	Glu	Asn	Ser	Ser	465	470	475	480
Leu	Gln	Glu	Lys	Ala	Ala	Lys	Ala	Gly	Lys	Asn	Ala	Glu	Asp	Val	Gln	485	490	495	
His	Gln	Ile	Leu	Ala	Thr	Glu	Ser	Ser	Asn	Gln	Glu	Tyr	Val	Arg	Met	500	505	510	
Leu	Leu	Asp	Leu	Gln	Thr	Lys	Ser	Ala	Leu	Lys	Glu	Thr	Glu	Ile	Lys	515	520	525	
Glu	Ile	Thr	Val	Ser	Phe	Leu	Gln	Lys	Ile	Thr	Asp	Leu	Gln	Asn	Gln	530	535	540	
Leu	Lys	Gln	Gln	Glu	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu	Asp	Glu	Glu	545	550	555	560
Gly	Arg	Lys	Ala	Glu	Lys	Glu	Asn	Thr	Thr	Ala	Glu	Leu	Thr	Glu	Glu	565	570	575	
Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Asn	Lys	Thr	Lys	580	585	590	
Pro	Phe	Gln	Leu	Gln	Leu	Asp	Ala	Phe	Glu	Val	Glu	Lys	Gln	Ala	Leu	595	600	605	
Leu	Asn	Glu	His	Gly	Ala	Ala	Gln	Glu	Gln	Leu	Asn	Lys	Ile	Arg	Asp	610	615	620	
Ser	Tyr	Ala	Lys	Leu	Leu	Gly	His	Gln	Asn	Leu	Lys	Gln	Lys	Ile	Lys	625	630	635	640
His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	Gln	Leu	Lys	Ser	Glu	Val	645	650	655	
Ser	Lys	Leu	Arg	Cys	Gln	Leu	Ala	Lys	Lys	Lys	Gln	Ser	Glu	Thr	Lys	660	665	670	
Leu	Gln	Glu	Glu	Leu	Asn	Lys	Val	Leu	Gly	Ile	Lys	His	Phe	Asp	Pro	675	680	685	
Ser	Lys	Ala	Phe	His	His	Glu	Ser	Lys	Glu	Asn	Phe	Ala	Leu	Lys	Thr				

690		695		700											
Pro	Leu	Lys	Glu	Gly	Asn	Thr	Asn	Cys	Tyr	Arg	Ala	Pro	Met	Glu	Cys
705					710					715					720
Gln	Glu	Ser	Trp	Lys											
				725											

<210> 48
 <211> 631
 <212> PRT
 <213> Homo sapien

<400> 48

Pro	Met	Arg	Ala	Leu	Ser	Leu	Glu	Leu	Met	Lys	Leu	Arg	Asn	Lys	Arg
1				5					10					15	
Glu	Thr	Lys	Met	Arg	Ser	Met	Met	Val	Lys	Gln	Glu	Gly	Met	Glu	Leu
			20					25					30		
Lys	Leu	Gln	Ala	Thr	Gln	Lys	Asp	Leu	Thr	Glu	Ser	Lys	Gly	Lys	Ile
		35					40					45			
Val	Gln	Leu	Glu	Gly	Lys	Leu	Val	Ser	Ile	Glu	Lys	Glu	Lys	Ile	Asp
	50					55					60				
Glu	Lys	Cys	Glu	Thr	Glu	Lys	Leu	Leu	Glu	Tyr	Ile	Gln	Glu	Ile	Ser
65					70					75					80
Cys	Ala	Ser	Asp	Gln	Val	Glu	Lys	Cys	Lys	Val	Asp	Ile	Ala	Gln	Leu
				85					90					95	
Glu	Glu	Asp	Leu	Lys	Glu	Lys	Asp	Arg	Glu	Ile	Leu	Ser	Leu	Lys	Gln
			100					105					110		
Ser	Leu	Glu	Glu	Asn	Ile	Thr	Phe	Ser	Lys	Gln	Ile	Glu	Asp	Leu	Thr
		115					120					125			
Val	Lys	Cys	Gln	Leu	Leu	Glu	Thr	Glu	Arg	Asn	Asp	Leu	Val	Ser	Lys
	130					135					140				
Asp	Arg	Glu	Arg	Ala	Glu	Thr	Leu	Ser	Ala	Glu	Met	Gln	Ile	Leu	Thr
145					150					155					160
Glu	Arg	Leu	Ala	Leu	Glu	Arg	Gln	Glu	Tyr	Glu	Lys	Leu	Gln	Gln	Lys
				165					170					175	
Glu	Leu	Gln	Ser	Gln	Ser	Leu	Leu	Gln	Gln	Glu	Lys	Glu	Leu	Ser	Ala
			180					185					190		
Arg	Leu	Gln	Gln	Gln	Leu	Cys	Ser	Phe	Gln	Glu	Glu	Met	Thr	Ser	Glu
	195						200					205			
Lys	Asn	Val	Phe	Lys	Glu	Glu	Leu	Lys	Leu	Ala	Leu	Ala	Glu	Leu	Asp
	210					215					220				
Ala	Val	Gln	Gln	Lys	Glu	Glu	Gln	Ser	Glu	Arg	Leu	Val	Lys	Gln	Leu
225					230					235					240
Glu	Glu	Glu	Arg	Lys	Ser	Thr	Ala	Glu	Gln	Leu	Thr	Arg	Leu	Asp	Asn
				245					250					255	
Leu	Leu	Arg	Glu	Lys	Glu	Val	Glu	Leu	Glu	Lys	His	Ile	Ala	Ala	His
			260					265					270		
Ala	Gln	Ala	Ile	Leu	Ile	Ala	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln
		275					280					285			

Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Val	Gln	Glu	Lys	Tyr	290	295	300
Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	305	310	315
Glu	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	325	330	335
Ala	Gln	Leu	Glu	Ser	Glu	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	340	345	350
Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Gln	Glu	Lys	Tyr	Asn	Asp	355	360	365
Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Tyr	Lys	370	375	380
Ser	Ser	Thr	Leu	Lys	Glu	Ile	Glu	Asp	Leu	Lys	Leu	Glu	Asn	Leu	Thr	385	390	395
Leu	Gln	Glu	Lys	Val	Ala	Met	Ala	Glu	Lys	Ser	Val	Glu	Asp	Val	Gln	405	410	415
Gln	Gln	Ile	Leu	Thr	Ala	Glu	Ser	Thr	Asn	Gln	Glu	Tyr	Ala	Arg	Met	420	425	430
Val	Gln	Asp	Leu	Gln	Asn	Arg	Ser	Thr	Leu	Lys	Glu	Glu	Glu	Ile	Lys	435	440	445
Glu	Ile	Thr	Ser	Ser	Phe	Leu	Glu	Lys	Ile	Thr	Asp	Leu	Lys	Asn	Gln	450	455	460
Leu	Arg	Gln	Gln	Asp	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu	Glu	Lys	Gly	465	470	475
Lys	Arg	Thr	Ala	Glu	Lys	Glu	Asn	Val	Met	Thr	Glu	Leu	Thr	Met	Glu	485	490	495
Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Glu	Lys	Thr	Lys	500	505	510
Pro	Phe	Gln	Gln	Gln	Leu	Asp	Ala	Phe	Glu	Ala	Glu	Lys	Gln	Ala	Leu	515	520	525
Leu	Asn	Glu	His	Gly	Ala	Thr	Gln	Glu	Gln	Leu	Asn	Lys	Ile	Arg	Asp	530	535	540
Ser	Tyr	Ala	Gln	Leu	Leu	Gly	His	Gln	Asn	Leu	Lys	Gln	Lys	Ile	Lys	545	550	555
His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	Gln	Leu	Lys	Ser	Glu	Val	565	570	575
Ser	Lys	Leu	Arg	Ser	Gln	Leu	Val	Lys	Arg	Lys	Gln	Asn	Glu	Leu	Arg	580	585	590
Leu	Gln	Gly	Glu	Leu	Asp	Lys	Ala	Leu	Gly	Ile	Arg	His	Phe	Asp	Pro	595	600	605
Ser	Lys	Ala	Phe	Cys	His	Ala	Ser	Lys	Glu	Asn	Phe	Thr	Pro	Leu	Lys	610	615	620
Glu	Gly	Asn	Pro	Asn	Cys	Cys										625	630	

<210> 49
 <211> 11
 <212> PRT

<213> Homo sapien

<400> 49

Val Ser Ile Glu Lys Glu Lys Ile Asp Glu Lys
1 5 10

<210> 50

<211> 21

<212> PRT

<213> Unknown

<220>

<223> Peptide used in competition binding assay

<400> 50

Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala
1 5 10 15
Gln Leu Glu Ser Val
20

<210> 51

<211> 32

<212> PRT

<213> Unknown

<220>

<223> Peptide used in competition binding assay

<400> 51

Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln
1 5 10 15
Leu Lys Ser Glu Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg Lys
20 25 30

<210> 52

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer for PCR amplification of collagen I

<400> 52

cgatgtcgct atccagctga

20

<210> 53

<211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer for PCR amplication of collagen III

<400> 53
 atcagtcagc catctaccac c 21

<210> 54
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer for PCR amplication of ED-1

<400> 54
 tggcaggaca gtagtcgc 18

<210> 55
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer for PCR amplication of ED-1

<400> 55
 aaggctgctg ttgaaaggac g 21

<210> 56
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Peptide that binds a hyalauronan

<400> 56
 Arg Gly Gly Gly Arg Gly Gly Arg Arg
 1 5

<210> 57
 <211> 9
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Peptide that binds a hyalauronan

<400> 57
 Arg Gly Gly Gly Arg Gly Gly Gly Arg
 1 5

<210> 58
 <211> 9
 <212> PRT
 <213> Artificial Sequence
 <220>
 <223> Peptide that binds a hyalauronan

<400> 58
 Arg Gly Gly Gly Gly Gly Gly Gly Arg
 1 5

<210> 59
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 59
 Lys Leu Arg Ser Gln Leu Val Lys Arg
 1 5

<210> 60
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 60
 Lys Gln Lys Ile Lys His Val Val Lys
 1 5

<210> 61
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 61
 Arg Ser His Lys Thr Arg Ser His His
 1 5

<210> 62
 <211> 7
 <212> PRT
 <213> Homo sapien

<400> 62
 Arg Pro His Phe His Lys Arg
 1 5

<210> 63
 <211> 11
 <212> PRT
 <213> Homo sapien

<400> 63
 Arg Lys Ile Gln Lys His Lys Thr Ile Pro Lys
 1 5 10

<210> 64
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 64
 Lys Val Gly Arg Lys Val Phe Ser Lys
 1 5

<210> 65
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 65
 Lys Cys Ser Val Gln Thr Leu Leu Arg
 1 5

<210> 66
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 66
 Arg Thr His Leu Lys His Val Leu Arg
 1 5

<210> 67
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 67
 Lys Asn Ala Ile Asn Asn Gly Val Arg
 1 5

<210> 68
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 68
 Lys Gly Gln Ile Asn Asn Ser Ile Lys
 1 5

<210> 69
 <211> 9
 <212> PRT
 <213> Homo sapien

<400> 69
 Arg Val Arg Gly Arg Ala Lys Leu Arg
 1 5

<210> 70
 <211> 15
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Peptide that binds a hyalauronan

<400> 70
 Ser Thr Met Met Ser Arg Ser His Lys Thr Arg Ser His His Val
 1 5 10 15

<210> 71
 <211> 32
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Peptide that binds a hyalauronan

<400> 71

Cys	Ser	Thr	Met	Met	Ser	Arg	Ser	His	Lys	Thr	Arg	Ser	His	His	Val
1				5					10					15	
Cys	Ser	Thr	Met	Met	Ser	Arg	Ser	His	Lys	Thr	Arg	Ser	His	His	Val
			20					25					30		

<210> 72

<211> 12

<212> PRT

<213> Homo sapien

<400> 72

Gly	Ala	His	Trp	Gln	Phe	Asn	Ala	Leu	Thr	Val	Arg
1				5					10		

<210> 73

<211> 333

<212> PRT

<213> Mus musculus

<400> 73

Ala	Gln	Ala	Ile	Leu	Ile	Ala	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln
1				5					10					15	
Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Val	Gln	Glu	Lys	Tyr
			20					25					30		
Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser
		35					40					45			
Glu	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr
	50					55					60				
Ala	Gln	Leu	Glu	Ser	Glu	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser
65					70					75					80
Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Val	Gln	Glu	Lys	Tyr	Asn
				85					90					95	
Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Ser	Ala	Gln	Leu	Glu	Ser	Tyr
		100						105					110		
Lys	Ser	Ser	Thr	Leu	Lys	Glu	Ile	Glu	Asp	Leu	Lys	Leu	Glu	Asn	Leu
		115					120					125			
Thr	Leu	Gln	Glu	Lys	Val	Ala	Met	Ala	Glu	Lys	Ser	Val	Glu	Asp	Val
	130					135					140				
Gln	Gln	Gln	Ile	Leu	Thr	Ala	Glu	Ser	Thr	Asn	Gln	Glu	Tyr	Ala	Arg
145					150					155					160
Met	Val	Gln	Asp	Leu	Gln	Asn	Arg	Ser	Thr	Leu	Lys	Glu	Glu	Glu	Ile
				165					170					175	

Lys	Glu	Ile	Thr	Ser	Ser	Phe	Leu	Glu	Lys	Ile	Thr	Asp	Leu	Lys	Asn			
			180													185		190
Gln	Leu	Arg	Gln	Gln	Asp	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu	Glu	Lys			
			195													200		205
Gly	Lys	Arg	Thr	Ala	Glu	Lys	Glu	Asn	Val	Met	Thr	Glu	Leu	Thr	Met			
			210													215		220
Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Glu	Lys	Thr			
			225													230		235
Lys	Pro	Phe	Gln	Gln	Gln	Leu	Asp	Ala	Phe	Glu	Ala	Glu	Lys	Gln	Ala			
																245		250
Leu	Leu	Asn	Glu	His	Gly	Ala	Thr	Gln	Glu	Gln	Leu	Asn	Lys	Ile	Arg			
			260													265		270
Asp	Ser	Tyr	Ala	Gln	Leu	Leu	Gly	His	Gln	Asn	Leu	Lys	Gln	Lys	Ile			
			275													280		285
Lys	His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	Gln	Leu	Lys	Ser	Glu			
			290													295		300
Val	Ser	Lys	Leu	Arg	Ser	Gln	Leu	Val	Lys	Arg	Lys	Gln	Asn	Glu	Leu			
			305													310		315
Arg	Leu	Gln	Gly	Glu	Leu	Asp	Lys	Ala	Leu	Gly	Ile	Arg						
																325		330

<210> 74
 <211> 242
 <212> PRT
 <213> Homo sapien

<400> 74

Gln	Glu	Lys	Tyr	Asp	Ser	Met	Val	Gln	Ser	Leu	Glu	Asp	Val	Thr	Ala			
																1		5
Gln	Phe	Glu	Ser	Tyr	Lys	Ala	Leu	Thr	Ala	Ser	Glu	Ile	Glu	Asp	Leu			
																20		25
Lys	Leu	Glu	Asn	Ser	Ser	Leu	Gln	Glu	Lys	Ala	Ala	Lys	Ala	Gly	Lys			
																35		40
Asn	Ala	Glu	Asp	Val	Gln	His	Gln	Ile	Leu	Ala	Thr	Glu	Ser	Ser	Asn			
																50		55
Gln	Glu	Tyr	Val	Arg	Met	Leu	Leu	Asp	Leu	Gln	Thr	Lys	Ser	Ala	Leu			
																65		70
Lys	Glu	Thr	Glu	Ile	Lys	Glu	Ile	Thr	Val	Ser	Phe	Leu	Gln	Lys	Ile			
																85		90
Thr	Asp	Leu	Gln	Asn	Gln	Leu	Lys	Gln	Gln	Glu	Glu	Asp	Phe	Arg	Lys			
																100		105
Gln	Leu	Glu	Asp	Glu	Glu	Gly	Arg	Lys	Ala	Glu	Lys	Glu	Asn	Thr	Thr			
																115		120
Ala	Glu	Leu	Thr	Glu	Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu			
																130		135
Leu	Tyr	Asn	Lys	Thr	Lys	Pro	Phe	Gln	Ile	Gln	Leu	Asp	Ala	Phe	Glu			
																145		150
Val	Glu	Lys	Gln	Ala	Leu	Leu	Asn	Glu	His	Gly	Ala	Ala	Gln	Glu	Gln			
																155		160

				165					170					175			
Leu	Asn	Lys	Ile	Arg	Asp	Ser	Tyr	Ala	Lys	Leu	Leu	Gly	His	Gln	Asn		
			180					185					190				
Leu	Lys	Gln	Lys	Ile	Lys	His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser		
		195					200					205					
Gln	Leu	Lys	Ser	Glu	Val	Ser	Lys	Leu	Arg	Cys	Gln	Leu	Ala	Lys	Lys		
	210					215					220						
Lys	Gln	Ser	Glu	Thr	Lys	Leu	Gln	Glu	Glu	Leu	Asn	Lys	Val	Leu	Gly		
225					230					235					240		
Ile	Lys																

<210> 75

<211> 221

<212> PRT

<213> Mus musculus

<400> 75

Lys	Ser	Ser	Thr	Leu	Lys	Glu	Ile	Glu	Asp	Leu	Lys	Leu	Glu	Asn	Leu		
1				5				10					15				
Thr	Leu	Gln	Glu	Lys	Val	Ala	Met	Ala	Glu	Lys	Ser	Val	Glu	Asp	Val		
			20					25				30					
Gln	Gln	Gln	Ile	Leu	Thr	Ala	Glu	Ser	Thr	Asn	Gln	Glu	Tyr	Ala	Arg		
		35					40				45						
Met	Val	Gln	Asp	Leu	Gln	Asn	Arg	Ser	Thr	Leu	Lys	Glu	Glu	Glu	Ile		
	50					55				60							
Lys	Glu	Ile	Thr	Ser	Ser	Phe	Leu	Glu	Lys	Ile	Thr	Asp	Leu	Lys	Asn		
65					70				75						80		
Gln	Leu	Arg	Gln	Gln	Asp	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu	Glu	Lys		
			85					90						95			
Gly	Lys	Arg	Thr	Ala	Glu	Lys	Glu	Asn	Val	Met	Thr	Glu	Leu	Thr	Met		
			100					105					110				
Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Glu	Lys	Thr		
		115					120					125					
Lys	Pro	Phe	Gln	Gln	Gln	Leu	Asp	Ala	Phe	Glu	Ala	Glu	Lys	Gln	Ala		
	130					135					140						
Leu	Leu	Asn	Glu	His	Gly	Ala	Thr	Gln	Glu	Gln	Leu	Asn	Lys	Ile	Arg		
145					150					155					160		
Asp	Ser	Tyr	Ala	Gln	Leu	Leu	Gly	His	Gln	Asn	Leu	Lys	Gln	Lys	Ile		
			165					170						175			
Lys	His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	Gln	Leu	Lys	Ser	Glu		
		180						185					190				
Val	Ser	Lys	Leu	Arg	Ser	Gln	Leu	Val	Lys	Arg	Lys	Gln	Asn	Glu	Leu		
		195				200						205					
Arg	Leu	Gln	Gly	Glu	Leu	Asp	Lys	Ala	Leu	Gly	Ile	Arg					
	210					215					220						

<210> 76

<211> 221

<212> PRT

<213> Homo sapien

<400> 76

Lys	Ala	Leu	Thr	Ala	Ser	Glu	Ile	Glu	Asp	Leu	Lys	Leu	Glu	Asn	Ser
1				5					10					15	
Ser	Leu	Gln	Glu	Lys	Ala	Ala	Lys	Ala	Gly	Lys	Asn	Ala	Glu	Asp	Val
		20						25					30		
Gln	His	Gln	Ile	Leu	Ala	Thr	Glu	Ser	Ser	Asn	Gln	Glu	Tyr	Val	Arg
		35					40					45			
Met	Leu	Leu	Asp	Leu	Gln	Thr	Lys	Ser	Ala	Leu	Lys	Glu	Thr	Glu	Ile
	50					55					60				
Lys	Glu	Ile	Thr	Val	Ser	Phe	Leu	Gln	Lys	Ile	Thr	Asp	Leu	Gln	Asn
65					70					75					80
Gln	Leu	Lys	Gln	Gln	Glu	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu	Asp	Glu
			85						90					95	
Glu	Gly	Arg	Lys	Ala	Glu	Lys	Glu	Asn	Thr	Thr	Ala	Glu	Leu	Thr	Glu
			100					105					110		
Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Asn	Lys	Thr
	115						120					125			
Lys	Pro	Phe	Gln	Ile	Gln	Leu	Asp	Ala	Phe	Glu	Val	Glu	Lys	Gln	Ala
	130					135					140				
Leu	Leu	Asn	Glu	His	Gly	Ala	Ala	Gln	Glu	Gln	Leu	Asn	Lys	Ile	Arg
145					150					155					160
Asp	Ser	Tyr	Ala	Lys	Leu	Leu	Gly	His	Gln	Asn	Leu	Lys	Gln	Lys	Ile
				165					170					175	
Lys	His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	Gln	Leu	Lys	Ser	Glu
			180					185					190		
Val	Ser	Lys	Leu	Arg	Cys	Gln	Leu	Ala	Lys	Lys	Lys	Gln	Ser	Glu	Thr
	195						200					205			
Lys	Leu	Gln	Glu	Glu	Leu	Asn	Lys	Val	Leu	Gly	Ile	Lys			
	210					215					220				

<210> 77

<211> 476

<212> PRT

<213> Mus musculus

<400> 77

Met	Gln	Ile	Leu	Thr	Glu	Arg	Leu	Ala	Leu	Glu	Arg	Gln	Glu	Tyr	Glu
1				5					10					15	
Lys	Leu	Gln	Gln	Lys	Glu	Leu	Gln	Ser	Gln	Ser	Leu	Leu	Gln	Gln	Glu
		20						25					30		
Lys	Glu	Leu	Ser	Ala	Arg	Leu	Gln	Gln	Gln	Leu	Cys	Ser	Phe	Gln	Glu
		35					40					45			
Glu	Met	Thr	Ser	Glu	Lys	Asn	Val	Phe	Lys	Glu	Glu	Leu	Lys	Leu	Ala
	50						55				60				

Leu	Glu	Leu	Asp	Ala	Val	Gln	Gln	Lys	Glu	Glu	Gln	Ser	Glu	Arg	Leu	65	70	75	80
Val	Lys	Gln	Leu	Glu	Glu	Glu	Arg	Lys	Ser	Thr	Ala	Glu	Gln	Leu	Thr	85	90	95	
Arg	Leu	Asp	Asn	Leu	Leu	Arg	Glu	Lys	Glu	Val	Glu	Leu	Glu	Lys	His	100	105	110	
Ile	Ala	Ala	His	Ala	Gln	Ala	Ile	Leu	Ile	Ala	Gln	Glu	Lys	Tyr	Asn	115	120	125	
Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Val	130	135	140	
Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	145	150	155	160
Gln	Leu	Glu	Ser	Glu	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	Leu	165	170	175	
Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Glu	Gln	Glu	Lys	Tyr	Asn	Asp	180	185	190	
Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Val	Gln	195	200	205	
Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Ser	Ala	Gln	210	215	220	
Leu	Glu	Ser	Tyr	Lys	Ser	Ser	Thr	Leu	Lys	Glu	Ile	Glu	Asp	Leu	Lys	225	230	235	240
Leu	Glu	Asn	Leu	Thr	Leu	Gln	Glu	Lys	Val	Ala	Met	Ala	Glu	Lys	Ser	245	250	255	
Val	Glu	Asp	Val	Gln	Gln	Gln	Ile	Leu	Thr	Ala	Glu	Ser	Thr	Asn	Gln	260	265	270	
Glu	Tyr	Ala	Arg	Met	Val	Gln	Asp	Leu	Gln	Asn	Arg	Ser	Thr	Leu	Lys	275	280	285	
Glu	Glu	Glu	Ile	Lys	Glu	Ile	Thr	Ser	Ser	Phe	Leu	Glu	Lys	Ile	Thr	290	295	300	
Asp	Leu	Lys	Asn	Gln	Leu	Arg	Gln	Gln	Asp	Glu	Asp	Phe	Arg	Lys	Gln	305	310	315	320
Leu	Glu	Glu	Lys	Gly	Lys	Arg	Thr	Ala	Glu	Lys	Glu	Asn	Val	Met	Thr	325	330	335	
Glu	Leu	Thr	Met	Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	340	345	350	
Tyr	Glu	Lys	Thr	Lys	Pro	Phe	Gln	Gln	Gln	Leu	Asp	Ala	Phe	Glu	Ala	355	360	365	
Glu	Lys	Gln	Ala	Leu	Leu	Asn	Glu	His	Gly	Ala	Thr	Gln	Glu	Gln	Leu	370	375	380	
Asn	Lys	Ile	Arg	Asp	Ser	Tyr	Ala	Gln	Leu	Leu	Gly	His	Gln	Asn	Leu	385	390	395	400
Lys	Gln	Lys	Ile	Lys	His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	Gln	405	410	415	
Leu	Lys	Ser	Glu	Val	Ser	Lys	Leu	Arg	Ser	Gln	Leu	Val	Lys	Arg	Lys	420	425	430	
Gln	Asn	Glu	Leu	Arg	Leu	Gln	Gly	Glu	Leu	Asp	Lys	Ala	Leu	Gly	Ile	435	440	445	
Arg	His	Phe	Asp	Pro	Ser	Lys	Ala	Phe	Cys	His	Ala	Ser	Lys	Glu	Asn				

450 455 460
 Phe Thr Pro Leu Lys Glu Gly Asn Pro Asn Cys Cys
 465 470 475

<210> 78
 <211> 407
 <212> PRT
 <213> Homo sapien

<400> 78

Met	Gln	Asn	Leu	Lys	Gln	Lys	Phe	Ile	Leu	Glu	Gln	Gln	Glu	His	Glu
1				5					10					15	
Lys	Leu	Gln	Gln	Lys	Glu	Leu	Gln	Ile	Asp	Ser	Leu	Leu	Gln	Gln	Glu
			20					25					30		
Lys	Glu	Leu	Ser	Ser	Ser	Leu	His	Gln	Lys	Leu	Cys	Ser	Phe	Gln	Glu
		35					40					45			
Glu	Met	Val	Lys	Glu	Lys	Asn	Leu	Phe	Glu	Glu	Glu	Leu	Lys	Gln	Thr
	50					55					60				
Leu	Asp	Glu	Leu	Asp	Lys	Leu	Gln	Gln	Lys	Glu	Gln	Ala	Glu	Arg	
65					70					75				80	
Leu	Val	Lys	Gln	Leu	Glu	Glu	Glu	Ala	Lys	Ser	Arg	Ala	Glu	Glu	Leu
				85					90					95	
Lys	Leu	Leu	Glu	Glu	Lys	Leu	Lys	Gly	Lys	Glu	Ala	Glu	Leu	Glu	Lys
			100					105					110		
Ser	Ser	Ala	Ala	His	Thr	Gln	Ala	Thr	Leu	Leu	Leu	Gln	Glu	Lys	Tyr
		115					120					125			
Asp	Ser	Met	Val	Gln	Ser	Leu	Glu	Asp	Val	Thr	Ala	Gln	Phe	Glu	Ser
	130					135					140				
Tyr	Lys	Ala	Leu	Thr	Ala	Ser	Glu	Ile	Glu	Asp	Leu	Lys	Leu	Glu	Asn
145					150					155					160
Ser	Ser	Leu	Gln	Glu	Lys	Ala	Ala	Lys	Ala	Gly	Lys	Asn	Ala	Glu	Asp
				165					170					175	
Val	Gln	His	Gln	Ile	Leu	Ala	Thr	Glu	Ser	Ser	Asn	Gln	Glu	Tyr	Val
			180					185					190		
Arg	Met	Leu	Leu	Asp	Leu	Gln	Thr	Lys	Ser	Ala	Leu	Lys	Glu	Thr	Glu
	195						200					205			
Ile	Lys	Glu	Ile	Thr	Val	Ser	Phe	Leu	Gln	Lys	Ile	Thr	Asp	Leu	Gln
	210					215					220				
Asn	Gln	Leu	Lys	Gln	Gln	Glu	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu	Asp
225					230					235					240
Glu	Glu	Gly	Arg	Lys	Ala	Glu	Lys	Glu	Asn	Thr	Thr	Ala	Glu	Leu	Thr
				245					250					255	
Glu	Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Asn	Lys
			260					265					270		
Thr	Lys	Pro	Phe	Gln	Leu	Gln	Leu	Asp	Ala	Phe	Glu	Val	Glu	Lys	Gln
		275					280					285			
Ala	Leu	Leu	Asn	Glu	His	Gly	Ala	Ala	Gln	Glu	Gln	Leu	Asn	Lys	Ile
	290					295						300			

Arg Asp Ser Tyr Ala Lys Leu Leu Gly His Gln Asn Leu Lys Gln Lys
 305 310 315 320
 Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln Leu Lys Ser
 325 330 335
 Glu Val Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys Gln Ser Glu
 340 345 350
 Thr Lys Leu Gln Glu Glu Leu Asn Lys Val Leu Gly Ile Lys His Phe
 355 360 365
 Asp Pro Ser Lys Ala Phe His His Glu Ser Lys Glu Asn Phe Ala Leu
 370 375 380
 Lys Thr Pro Leu Lys Glu Gly Asn Thr Asn Cys Tyr Arg Ala Pro Met
 385 390 395 400
 Glu Cys Gln Glu Ser Trp Lys
 405

<210> 79

<211> 476

<212> PRT

<213> Mus musculus

<400> 79

Met Gln Ile Leu Thr Glu Arg Leu Ala Leu Glu Arg Gln Glu Tyr Glu
 1 5 10 15
 Lys Leu Gln Gln Lys Glu Leu Gln Ser Gln Ser Leu Leu Gln Gln Glu
 20 25 30
 Lys Glu Leu Ser Ala Arg Leu Gln Gln Gln Leu Cys Ser Phe Gln Glu
 35 40 45
 Glu Met Thr Ser Glu Lys Asn Val Phe Lys Glu Glu Leu Lys Leu Ala
 50 55 60
 Leu Ala Glu Leu Asp Ala Val Gln Gln Lys Glu Glu Gln Ser Glu Arg
 65 70 75 80
 Leu Val Lys Gln Leu Glu Glu Glu Arg Lys Ser Thr Ala Glu Gln Leu
 85 90 95
 Thr Arg Leu Asp Asn Leu Leu Arg Glu Lys Glu Val Glu Leu Glu Lys
 100 105 110
 His Ile Ala Ala His Ala Gln Ala Ile Leu Ile Ala Gln Glu Lys Tyr
 115 120 125
 Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser
 130 135 140
 Val Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr
 145 150 155 160
 Ala Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser
 165 170 175
 Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Glu Gln Glu Lys Tyr Asn
 180 185 190
 Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala Gln Leu Glu Ser Val
 195 200 205
 Gln Glu Lys Tyr Asn Asp Thr Ala Gln Ser Leu Arg Asp Val Thr Ala

210		215		220
Gln Leu Glu Ser Tyr Lys	Ser Ser Thr Leu Lys	Glu Ile Glu Asp Leu		
225	230	235	240	
Lys Leu Glu Asn Leu Thr	Leu Gln Glu Lys Val	Ala Met Ala Glu Lys		
	245	250	255	
Ser Val Glu Asp Val Gln	Gln Gln Ile Leu Thr	Ala Glu Ser Thr Asn		
	260	265	270	
Gln Glu Tyr Ala Arg Met	Val Gln Asp Leu Gln	Asn Arg Ser Thr Leu		
	275	280	285	
Lys Glu Glu Glu Ile Lys	Glu Thr Ser Ser Phe	Leu Glu Lys Ile Thr		
	290	295	300	
Asp Leu Lys Asn Gln Leu	Arg Gln Gln Asp Glu	Asp Phe Arg Lys Gln		
305	310	315	320	
Leu Glu Glu Lys Gly Lys	Arg Thr Ala Glu Lys	Glu Asn Val Met Thr		
	325	330	335	
Glu Leu Thr Met Glu Ile	Asn Lys Trp Arg Leu	Leu Tyr Glu Glu Leu		
	340	345	350	
Tyr Glu Lys Thr Lys Pro	Phe Gln Gln Leu Asp	Ala Phe Glu Ala		
	355	360	365	
Glu Lys Gln Ala Leu Leu	Asn Glu His Gly Ala	Thr Gln Glu Gln Leu		
	370	375	380	
Asn Lys Ile Arg Asp Ser	Tyr Ala Gln Leu Leu	Gly His Gln Asn Leu		
385	390	395	400	
Lys Gln Lys Ile Lys His	Val Val Lys Leu Lys	Asp Glu Asn Ser Gln		
	405	410	415	
Leu Lys Ser Glu Val Ser	Lys Leu Arg Ser Gln	Leu Val Lys Arg Lys		
	420	425	430	
Gln Asn Glu Leu Arg Leu	Gln Gly Glu Leu Asp	Lys Ala Leu Gly Ile		
	435	440	445	
Arg His Phe Asp Pro Ser	Lys Ala Phe Cys His	Ala Ser Lys Glu Asn		
	450	455	460	
Phe Thr Pro Leu Lys Glu	Gly Asn Pro Asn Cys	Cys		
465	470	475		

<210> 80

<211> 435

<212> PRT

<213> Mus musculus

<400> 80

Met Gln Ile Leu Thr Glu	Arg Leu Ala Leu Glu	Arg Gln Glu Tyr Glu
1	5	10
Lys Leu Gln Gln Lys Glu	Leu Gln Ser Gln Ser	Leu Leu Gln Gln Glu
	20	25
Lys Glu Leu Ser Ala Arg	Leu Gln Gln Gln Leu	Cys Ser Phe Gln Glu
	35	40
Glu Met Thr Ser Glu Lys	Asn Val Phe Lys Glu	Glu Leu Lys Leu Ala
50	55	60

Leu	Ala	Glu	Leu	Asp	Ala	Val	Gln	Gln	Lys	Glu	Glu	Gln	Ser	Glu	Arg	65	70	75	80
Leu	Val	Lys	Gln	Leu	Glu	Glu	Glu	Arg	Lys	Ser	Thr	Ala	Glu	Gln	Leu	85	90	95	
Thr	Arg	Leu	Asp	Asn	Leu	Leu	Arg	Glu	Lys	Glu	Val	Glu	Leu	Glu	Lys	100	105	110	
His	Ile	Ala	Ala	His	Ala	Gln	Ala	Ile	Leu	Ile	Ala	Gln	Glu	Lys	Tyr	115	120	125	
Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	130	135	140	
Val	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	145	150	155	160
Ala	Gln	Leu	Glu	Ser	Glu	Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	165	170	175	
Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Glu	Gln	Glu	Lys	Tyr	Asn	180	185	190	
Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Thr	Ala	Gln	Leu	Glu	Ser	Val	195	200	205	
Gln	Glu	Lys	Tyr	Asn	Asp	Thr	Ala	Gln	Ser	Leu	Arg	Asp	Val	Ser	Ala	210	215	220	
Gln	Leu	Glu	Ser	Tyr	Lys	Ser	Ser	Thr	Leu	Lys	Glu	Ile	Glu	Asp	Leu	225	230	235	240
Lys	Leu	Glu	Asn	Leu	Thr	Leu	Gln	Glu	Lys	Val	Ala	Met	Ala	Glu	Lys	245	250	255	
Ser	Val	Glu	Asp	Val	Gln	Gln	Gln	Ile	Leu	Thr	Ala	Glu	Ser	Thr	Asn	260	265	270	
Gln	Glu	Tyr	Ala	Arg	Met	Val	Gln	Asp	Leu	Gln	Asn	Arg	Ser	Thr	Leu	275	280	285	
Lys	Glu	Glu	Glu	Ile	Lys	Glu	Ile	Thr	Ser	Ser	Phe	Leu	Glu	Lys	Ile	290	295	300	
Thr	Asp	Leu	Lys	Asn	Gln	Leu	Arg	Gln	Gln	Asp	Glu	Asp	Phe	Arg	Lys	305	310	315	320
Gln	Leu	Glu	Glu	Lys	Gly	Lys	Arg	Thr	Ala	Glu	Lys	Glu	Asn	Val	Met	325	330	335	
Thr	Glu	Leu	Thr	Met	Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	340	345	350	
Leu	Tyr	Glu	Lys	Thr	Lys	Pro	Phe	Gln	Gln	Gln	Leu	Asp	Ala	Phe	Glu	355	360	365	
Ala	Glu	Lys	Gln	Ala	Leu	Leu	Asn	Glu	His	Gly	Ala	Thr	Gln	Glu	Gln	370	375	380	
Leu	Asn	Lys	Ile	Arg	Asp	Ser	Tyr	Ala	Gln	Leu	Leu	Gly	His	Gln	Asn	385	390	395	400
Leu	Lys	Gln	Lys	Ile	Lys	His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	405	410	415	
Gln	Leu	Lys	Ser	Glu	Val	Ser	Lys	Leu	Arg	Ser	Gln	Leu	Val	Lys	Arg	420	425	430	
Lys	Gln	Asn														435			

<210> 81
 <211> 32
 <212> PRT
 <213> Homo sapien

<400> 81
 Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln
 1 5 10 15
 Leu Lys Ser Glu Val Ser Lys Leu Arg Cys Gln Leu Ala Lys Lys Lys
 20 25 30

<210> 82
 <211> 32
 <212> PRT
 <213> Mus musculus

<400> 82
 Lys Gln Lys Ile Lys His Val Val Lys Leu Lys Asp Glu Asn Ser Gln
 1 5 10 15
 Leu Lys Ser Glu Val Ser Lys Leu Arg Ser Gln Leu Val Lys Arg Lys
 20 25 30

<210> 83
 <211> 352
 <212> PRT
 <213> Homo sapien

<400> 83
 Met Gln Asn Leu Lys Gln Lys Phe Ile Leu Glu Gln Gln Glu Arg Glu
 1 5 10 15
 Lys Leu Gln Gln Lys Glu Leu Gln Ile Asp Ser Leu Leu Gln Gln Glu
 20 25 30
 Lys Glu Leu Ser Ser Ser Leu His Gln Lys Leu Cys Ser Phe Gln Glu
 35 40 45
 Glu Met Ala Lys Glu Lys Asn Leu Phe Glu Glu Glu Leu Lys Gln Thr
 50 55 60
 Leu Asp Glu Leu Asp Lys Leu Gln Gln Lys Glu Glu Gln Ala Glu Arg
 65 70 75 80
 Leu Val Lys Gln Leu Glu Glu Glu Ala Lys Ser Arg Ala Glu Glu Leu
 85 90 95
 Lys Leu Leu Glu Glu Lys Leu Lys Gly Lys Glu Ala Glu Leu Glu Lys
 100 105 110
 Ser Ser Ala Ala His Thr Gln Ala Thr Leu Leu Leu Gln Glu Lys Tyr
 115 120 125
 Asp Ser Met Val Gln Ser Leu Glu Asp Val Thr Ala Gln Phe Glu Ser
 130 135 140

Tyr	Lys	Ala	Leu	Thr	Ala	Ser	Glu	Ile	Glu	Asp	Leu	Lys	Leu	Glu	Asn	145	150	155	160
Ser	Ser	Leu	Gln	Glu	Lys	Ala	Val	Ala	Lys	Ala	Gly	Lys	Asn	Ala	Glu	165	170	175	
Asp	Val	Gln	His	Gln	Ile	Leu	Ala	Thr	Glu	Ser	Ser	Asn	Gln	Glu	Tyr	180	185	190	
Val	Arg	Met	Leu	Leu	Asp	Leu	Gln	Thr	Lys	Ser	Ala	Leu	Lys	Glu	Thr	195	200	205	
Glu	Ile	Lys	Glu	Ile	Thr	Val	Ser	Phe	Leu	Gln	Lys	Ile	Thr	Asp	Leu	210	215	220	
Gln	Asn	Gln	Leu	Lys	Gln	Gln	Glu	Glu	Asp	Phe	Arg	Lys	Gln	Leu	Glu	225	230	235	240
Asp	Glu	Glu	Gly	Arg	Lys	Ala	Glu	Lys	Glu	Asn	Thr	Thr	Ala	Glu	Leu	245	250	255	
Thr	Glu	Glu	Ile	Asn	Lys	Trp	Arg	Leu	Leu	Tyr	Glu	Glu	Leu	Tyr	Asn	260	265	270	
Lys	Thr	Lys	Pro	Phe	Gln	Leu	Gln	Leu	Asp	Ala	Phe	Glu	Val	Glu	Lys	275	280	285	
Gln	Ala	Leu	Leu	Asn	Glu	His	Gly	Ala	Ala	Gln	Glu	Gln	Leu	Asn	Lys	290	295	300	
Ile	Arg	Asp	Ser	Tyr	Ala	Lys	Leu	Leu	Gly	His	Gln	Asn	Leu	Lys	Gln	305	310	315	320
Lys	Ile	Lys	His	Val	Val	Lys	Leu	Lys	Asp	Glu	Asn	Ser	Gln	Leu	Lys	325	330	335	
Ser	Glu	Val	Ser	Lys	Leu	Arg	Cys	Gln	Leu	Ala	Lys	Lys	Lys	Thr	Lys	340	345	350	

<210> 84

<211> 11

<212> PRT

<213> Mus musculus

<400> 84

Val	Ser	Ile	Glu	Lys	Glu	Lys	Ile	Asp	Glu	Lys
1				5					10	